

USSR/Human and Animal Physiology: Neuromuscular Physiology

T-11

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65599

Author : Trochin A.S.

Inst :

Title : The Free and Combined Sodium in the Skeletal Muscle of the Frog.

Orig Pub : Biofizika, 1957, 2, No 5, 617-627

Abstract : The concentration of Na in isolated frog sartorius muscles was determined by the zinc-uranil-acetate method. The amount of free and combined Na was determined by the distribution of radioactive Na between the muscles and Ringer's solution. The relationship between the concentration of Na in the muscle fibers and its concentration in the Ringer's solution was determined. Before being submerged in Ringer's solution, the muscle contained 2.29 ± 0.17 meq% Na. After two hours spent in Ringer's solution, the Na concentration in the muscle increased by 1.09 meq%, and during the succeeding three hours it increased by only 0.47 meq%. The

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USSR/Human and Animal Physiology. Neuromuscular Physiology

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Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65599

water content of the muscle remained unchanged for the entire time. The Na was present in the muscle in two forms: bound ($\sim 0.7 \text{ meq\%}$) and free. The concentration of the Na in the muscles rose during the time they were in the Ringer's solution through an increase in the fraction of free (dissolved) Na. The exchange of the free Na of the muscles for the Na^{24} of the Ringer's solution was complete after 40-60 minutes; the exchange of the combined (non-ionized) Na was completed at a rate 700 times slower than the rate of exchange of the Na of the intercellular spaces and 100 times slower than the rate of exchange of the free Na of the muscle fibers. The concentration of free Na in the muscles changed in direct proportion to the change in concentration of this cation in the surrounding equilibrium solution.
--F.I. Munkladze

Card : 2/2

TROCHINSKIY, N.; KORYTKO, G.

Cultivation practices as a basic means for eradicating potato
wart. Zashch. rast. ot vred. i bol. 6 no.6:49-50 Je '61.
(MIRA 16:4)

1. Machal'mik Zhitomirskoy inspektsii po karantinu rasteniy
(for Trochinskiy). 2. Starshiy inspektor Zhitomirskoy
inspektsii po karantinu rasteniy (for Korytko).

(Zhitomir Province—Potato wart)

TROCHINSKIY, Ye. I.

TROCHNSKIY, E. I. I DRUZKIN, B. M.

30482

Sborka shtsangoutnykh ram ryechnykh sudov svarnoy i kompozitnoy
konstruktsii. Ryech. transport, 1949, No 5, S. 22-23.

SO: Letopis' No. 34

TROCHNISKIY, Ye.

PA 22/45743

USSR/Engineering
Ships, Construction
Construction Equipment

Oct 48

"Technological Devices for Assembling Wooden Craft
in Series Production," Ye. Trochniskiy, 7 pp

"Morskoy Flot" No 10

Describes procedures in detail, with 12 sketches.

FDB

23/49T43

TROCHTA, E., inz.

"Epoxy resins" by M.Lidarik, J.Kincl, V.Roth and A.Bring.
Reviewed by E.Trocta. El tech obzor 51 no.7:373-374 J1
'62.

TROCHTA, Ervin; LANGER, Jan.

Effect of Sial glass on the results of laboratory tests in
macromolecular technology. Chem prum 14 no.5:270-271 My '64.

1. Research Institute of Cables and Insulators, Bratislava.

HORECKY, J. Technicka spoluprace TROCHTA, L.

Heat exchange in regional perfusion. Rozhl.chir. 44 no.1:51-63
Ja '65

1. Experimentálne laboratórium II. chirurgickej kliniky Lekárskej
fakulty University Karlovy v Bratislave (prednosta: akademik
K. Siska).

TROCHTA, O.

TROCHTA, O.

Flying over the cradle of the October Revolution

P. 616 (Kridla Vlasti) Vol. 3, No. 20, Oct. 1957, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. - VOL. 7, NO. 1, JAN. 1958

KUNCOVA, Zdenka; PAVLASKOVA, Irena; TREPNY, Zdenek; TROCHOVA, Katerina

Seaside treatment of asthmatic children. Cesk.pediat. 15 no.9:
778-781 S '60.

1. Detske oddeleni Fakultni polikliniky v Praze 2, prednostka
MUDr. Zdenka Kuncova.

(ASTHMA in infancy & childhood)
(CLIMATE ther.)

KUNCOVA, Z.; HALIKOVA, M.; MULLEROVA, A.; PAVLASKOVA, I.; SOMMROVA, V.;
~~TROCHOVA, K.~~

Experiences with the treatment of asthmatic children. Cesk. pediat.
15 no.9:782-784 S '60.

1. Detské oddelení Fakultní polikliniky v Praze 2, přednostka
MUDr. Zdenka Kuncová.
(ASTHMA in infancy & childhood)

5

14

Stress Changes in the Welding Process. I. P. Trochun. (Avtoqennoe Delo, 1948, No. 12, pp. 22-23). (In Russian). Stress-temperature diagrams are developed for temperature conditions existing during welding, and the growth of residual stresses is related to the plastic properties of the material being welded. S. K.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

TROCHTOVA, V.

TROCHTOVA, V. Motorization and its consequences. p. 669
Commitments of the Vah River Area Machine Works. p. 669

Vol. 10, no. 21, 1956, Oct.
SVET MOTORU
TECHNOLOGY
Praha, Czechoslovakia

So: East European Accession Vol. 6, no. 2, 1957

TROCHTOVA, V.

Motorists for the defense of the country. p. 130.

For further development of our patriotic organization: an important meeting of the Central Council of the League for Cooperation with the Army. p. 131.

SVET MOTORU, Praha, Vol. 9, no. 5, Mar. 1955.

SO: Monthly List of East European Accusations, (EEAL), IC, Vol. 4, no. 10, Oct. 1955,
Uncl.

PATON, B.Ye., doktor tekhnicheskikh nauk, redaktor; TROCHUN, I.P.,
kandidat tekhnicheskikh nauk, retsenzent; SEADYUK, V.K., inzhener,
redaktor izdatel'stva; RUDENSKIY, Ya.V., tekhnicheskij redaktor

[Manual for electric arc welding under flux] Rukovodstvo po
elektrodogovoi svarke pod fliusom. Pod red. B.E.Patona. Kiev,
Gos.nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 235 p.
(MLRA 10:6)

1. Akademiya nauk URSR, Kiyev. Institut elektrosvarivannya.
2. Chlen-korrespondent Akademii nauk USSR (for Paton)
(Electric welding)

COMMON ELEMENTS		MATERIALS INDEX		SUBJECT INDEX		AUTHOR INDEX		TITLE INDEX		DESCRIPTORS		SYNONYMS		RELATED TERMS		CROSS REFERENCES		NOTES	
<p>22-398. WELDING OF CRACKS IN HIGH-PRESSURE CYLINDERS. T. P. Troshun. <u>Avtorennoye Delo</u> (Welding), no. 4, 1947, p. 29-30. (In Russian.) Methods clarified by diagrams.</p>																			
<p>ASB-ILA DETALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>RESEARCH AND DEVELOPMENT INDEX</p>																			
<p>RESEARCH AND DEVELOPMENT INDEX</p>																			

1ST AND 2ND COVER

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH COVER

COMMON ELEMENTS

COMMON VARIABLES INDEX

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7

Variation of Stresses During Welding. (In Russian.)
I. P. Trochun, *Avtozashchita Delo* (Welding), Dec.
1948, p. 22-23.

Stress variations in structural members as a re-
sult of heating and cooling during welding were
investigated. Diagrams show graphically the for-
mation of residual stresses.

EXTENSION

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TROCHUN, I.P.

35317. TROCHUN, I.P. Diagrammy izmeneniya napryazheniy v protsesse
svarki. V SB:50 Let Kievsk. Politekhn. In-Ta. Kiev, 1948,
S. 305-19

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

TROCHUN, I. P.

Trochun, I. P. "The determination of stresses and deformations arising from the heating the edge of the plate in welding," Izvestiya Kiyevsk, politekhn. in-ta, Vol VIII, 1948 (on Cover: 1949), p. 215-30

SO: U-5241, 17 December 1953, (Letopis 'Zhurnal 'nykh Statey, No. 26, 1947)

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5

The Rational Sequence of Operations for Welding Boiler Drums. L. L. Tazakian. (Advances in Welding Technology, No. 1, p. 27). The Russian. The manufacture of boiler drums is given as an example of the way in which the correct sequence of operations can reduce residual stresses in the weld seam and the deformation of the parts. s k

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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PROCEDURES AND PROPERTIES INDEX			
<p>Conditions for Intermittent Spot Welding. (In Russian.) I. P. Trochun and G. V. Vasil'ev. <i>Avtozhennoe Delo</i> (Welding), v. 21, Mar. 1960, p. 11-14.</p> <p>Describes above method of welding characterized by interrupted application of the welding current, necessitated by a difference in the rate of heat transfer into the interior of the sheet and the rate of heat escape from the surface of the sheets through the electrodes. This method is recommended for low-carbon steel sheets of 3-10 mm. thickness. Special advantages are discussed. Optimum conditions of welding for different cases are indicated.</p>			
METALLURGICAL LITERATURE CLASSIFICATION		EDITION NUMBER	
EDITION NUMBER	EDITION NUMBER	EDITION NUMBER	EDITION NUMBER

TROCHUN, I. P.

Electric Welding.

Determination of inner stresses in welding. Avtom.svar. 4, no. 6 (21), 1951.

9. Monthly List of Russian Accessions, Library of Congress, June 1953² Uncl.

TROCHUN, I.P.

Pamiatka elektrosvarshchiku (Booklet for
the arc welder). Moskva, Mashgiz, 1952. 10h p.

SO: Monthly List of Russian Accessions, Vol. 6, No. 1, April 1953

PATON, Ye.O., akademik, redaktor; TROCHUN, I.P., redaktor, kandidat tekhnicheskikh nauk; SAMOKHALOV, Ya.A., ~~inzhener~~, redaktor.

SMOS

[Automatic electric arc welding] Avtomaticheskaya elektrodugovaya svarka. Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry [Ukr. otd-nie] 1953. 393 p.

(MLBA 7:1)

(Electric welding)

TROCHUN, I. P.

BORT, M.M., kandidat tekhnicheskikh nauk; BYALOTSKIY, L.A., assistant;
VASIL'YEV, G.V., assistent; GAPCHENKO, M.N., kandidat tekhnicheskikh
nauk; GRESSEL'NIK, P.G., kandidat tekhnicheskikh nauk, otvetstvennyy
redaktor; TROCHUN, I.P., kandidat tekhnicheskikh nauk; SERDYUK, V.K.,
vedushchiy redaktor; inzhener; RUDENSKIY, Ya.V., tekhnicheskiy re-
daktor.

[Electric welder's reference book] Spravochnik elektrosvarshchika.
Izd. 2-e, perer. Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit.
lit-ry, 1954. 515 p. [Microfilm] (MLRA 8:1)
(Electric welding)

SAKHNENKO, Vladimir L'vovich; MAKSIMOVICH, Vadim Aleksandrovich; TROITSKIY, Anatoliy Vasil'eyvich; TROCHUN, Ivan Petrovich; POTISHKO, Aleksey Vasil'evich; AVRAMENKO, Luka Avksent'yevich; VAREYKIS, Arnol'd Mikhaylovich; VITKUP, Ye.B., redaktor; RAYKO, M.V., redaktor; SAMOKHVALOV, Ya.A., vedushchiy redaktor; VAL'CHUK, G.I., vedushchiy redaktor; PATSALYUK, P.M., tekhnicheskiiy redaktor

[Atlas of machine parts; mechanical joints and couplings] Atlas
detalei mashin; soedineniia i mufty. Kiev, Gos. izd-vo tekhn. lit-
ry USSR, 1956. 146 p. (MLRA 10:2)

(Couplings) (Welding) (Fastenings)

L 9683-66 EWT(m)/EWP(v)/T/EWP(t)/EMP(k)/EMP(b)/EMA(c) ID/HH
 ACC NR: AP5027596 SUB CODE: UR/0135/65/000/011/0003/0005

AUTHOR: Trochun, I. P. (Candidate of technical sciences); Chernysh, V. P. (Engineer)
 44, 55 37 23

ORG: none

TITLE: Magnetic control of crystallization during electroslag welding
 44, 55 18

SOURCE: Svarochnoye proizvodstvo, no. 11, 1965, 3-5

TOPIC TAGS: magnetic control, electroslag welding, metal crystallization, alternating electromagnetic field

ABSTRACT: Welds produced by the electroslag method display a characteristic trans-crystallite structure distinguished by lowered plasticity and lowered resistance to the formation of hot cracks. These shortcomings can be remedied by postheating, but this is not an economical technique. It is also possible, in principle, to remedy them by introducing modifying agents or by applying ultrasonic or mechanical vibration to the molten pool. But at present these techniques still are not practical. What remains then is control of crystallization by means of electromagnetic stirring of the molten pool during electroslag welding. To verify this possibility, the authors performed experiments to determine the dependence of the structure of the crystallized weld metal on the nature of surges in the molten pool. Ingots of a nonferromagnetic metal were subjected to electroslag welding by means of reversed-polarity

UDC: 621.791.793.011

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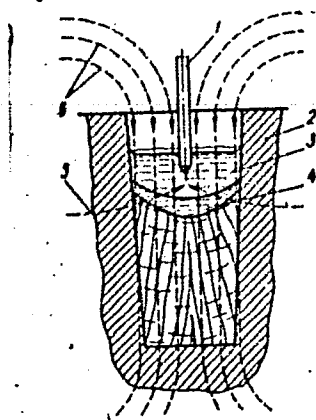


Fig. 1. Schematic of experiment:

1 - consumable electrode; 2 - crystallizer; 3 - slag bath;
4 - molten metal; 5 - lines of welding current; 6 - magnetic
lines of force

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ACC NR: AP5027596

current. The molten pool was intersected by a magnetic flux directed along the vertical axis of the ingot (Fig. 1). The direction of rotation of the molten pool is alternately reversed by reversing the polarity of the magnetic field; this produces a stable oscillatory motion of the molten pool. In the presence of a low oscillation frequency (up to 15 cps) the columnar crystallites retain the same orientation as when a magnetic field is not applied, yet are much smaller. No explanation can be provided for this phenomenon as yet, but in all likelihood it is associated with cavitation. Thus the application of an alternating-polarity electromagnetic field to the molten pool during welding makes it possible to control the process of crystallization. Depending on the parameters of the field it is possible to reduce the size of the columnar crystallites, to alter the growth direction of these crystallites, and to eliminate (partially or completely) the transcrystallite structure, with the attendant formation of structures of a roughly equiaxial character. The best results in controlling crystallization are assured by an oscillatory rather than rotational character of motion of the molten pool (up to 15 cps). Orig. art. has: 4 figures

SUB CODE: 11,13,20/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 000

80
Card 2/3

Zhdanov, I. M. (Engineer)

... of the steel elements in weld construction

AM4036549

BOOK EXPLOITATION

S/

Trochun, I. P.

Internal stresses and deformations in welding (Vnutrenniye usiliya i deformatsii pri svarke), Moscow, Mashgiz, 1964, 246 p. illus., biblio. Errata slip inserted. 3,000 copies printed.

TOPIC TAGS: internal stress, deformation, welding, residual stress

PURPOSE AND COVERAGE: The book examines the problems of the appearance of internal stresses and the formation of residual stresses and deformations resulting from local heating of metal. There are calculations of the internal stresses and residual deformations in weldments and structures. There is a description of the design and engineering measures to reduce the weld stresses and deformations. The book is intended for engineers and technicians concerned with welding.

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SUB CODE: MM

OTHER: 006

SUBMITTED: 28Oct63

NR REF SOV: 044

DATE ACQ: 07May64

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TROCHUN, I.P.; SHEVERNITSKIY, V.V., kand. tekhn. nauk, retsenzent;
OREL, I.V., inzh., red.; YEVSTAF'YEVA, N.P., red.izd-va;
MAKAROVA, L.A., tekhn. red.

[Internal stresses and deformations during welding] Vnutren-
nie usiliia i deformatsii pri svarke. Moskva, Mashgiz,
1964. 246 p. (MIRA 17:3)

BORT, M.M., kand.tekhn.nauk; BYALOTSKIY, L.A., inzh.; VASIL'YEV, G.V., inzh.;
VOSHCHANOV, K.P., inzh.; GAPCHENKO, M.N., kand.tekhn.nauk; GORPENYUK,
N.A., kand.tekhn.nauk; GREBEL'NIK, P.G., kand.tekhn.nauk; DYATLOV,
V.I., kand.tekhn.nauk; TROCHUN, I.P., kand.tekhn.nauk; KHRENOV, K.K.,
akademik; SOROKA, M.S., red.

[Electric welder's handbook] Spravochnik elektrosvarshchika. Izd.3.,
perer. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961.
748 p. (MIRA 14:6)

1. AN USSR (for Khrenov).
(Electric welding)

SOV/137-57-10-19484

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 149 (USSR)

AUTHOR: Trochun, I.P.

TITLE: Residual Strains Resulting From Longitudinal Shrinkage of Metal During Welding (Ostatochnyye deformatsii ot prodol'noy usadki pri svarke)

PERIODICAL: V sb.: Probl. dugovoy i kontakt. elektrosvarki. Kiyev-Moscow, Mashgiz, 1956, pp 90-97

ABSTRACT: An outline of methods employed in the determination of internal stresses and residual strains resulting from longitudinal shrinkage of metal fibers in the heat-affected zone during cooling of welded connections. The computation of stresses and strains is broken down into the following stages: 1) Determination of the extent of the heat-affected zone; 2) determination of the axial stress, P , and the corresponding reaction in the form of an axial compressive stress, σ_2 ; 3) determination of residual deformations and residual stresses. Examples of computational procedures are given.

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A.R.

ТРОХУН, І. П.

PHASE I BOOK EXPLOITATION

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Akademiya nauk URSR, Kiyev. Instytut elektrozvaruvannya

Rukovodstvo po elektrodugovoy svarke pod flyusom (Handbook of Flux-shielded Arc Welding) Kiyev, Mashgiz, 1957. 235 p. 11,000 copies printed.

Ed.: Paton, B. Ye., Corresponding Member, Ukrainian Academy of Sciences, Doctor of Technical Sciences; Reviewer: Trochun, I. P., Candidate of Technical Sciences; Ed. of Publishing House: Serdyuk, V. K.; Tech. Ed.: Rudenskiy, Ya. V.; Managing Ed. of the Ukrainian Branch of Mashgiz: Zalogin, N. S.

PURPOSE: This book is intended for the use of welders and welding foremen.

COVERAGE: The book presents the principles and methods of flux-shielded automatic arc welding. Automatic and semiautomatic welding machines of modern design are described, and instructions are given for their operation and adjustment. Peculiarities of welding and surfacing operations are described in detail. Specific instructions are given for the welding of low-, medium-, and high-

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Handbook of Flux-shielded Arc Welding

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carbon steels, low- and high-alloy steels, and nonferrous metals. Chapters I, II, IV, VI, X, and XI were written by B.I. Medovar, Candidate of Technical Sciences; Chapters III, VIII, IX, XII, and XIV by V.V. Podgayetskiy, Candidate of Technical Sciences; Chapters V and VII by S.L. Mandel'berg, Candidate of Technical Sciences; and Chapters XIII and IV by S.L. Zhemchuzhnikov, Candidate of Technical Sciences. It is stated that the modern method of flux-shielded arc welding, as currently practiced in the Soviet Union, was developed in 1940 at the Institut Elektrosvarki (Institute of Electric Welding), Ukrainian Academy of Sciences, under the leadership of Yevgeniy Oskarovich Paton, Academician. The Institute, which now has the by-name "imeni Paton", has collaborated for a number of years with TsNITIMASH (Tsentral'nyy nauchno-issledovatel'skiy institut mashinostroyeniya i metalloobrabotki: Central Scientific Research Institute for Machine Building and Metalworking), MVTU imeni Baumana (Moskovskoye vyssheye uchilishche imeni Baumana: Moscow Higher Technical School imeni Bauman), and the plant "Elektrik". This collective research is said to be responsible for the great increase in the use of welding in the USSR during recent years. There are 13 references, all Soviet.

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3. Basic units of welding outfits
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AVAILABLE: Library of Congress (TK4660.A457)

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"APPROVED FOR RELEASE: 04/03/2001

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TROCHUN, I.T.

Design for strength of elements for welded structures. Avtom.svar.
15 no.5:49-54 My '62. (MIRA 15:4)

1. Kiyevskiy ordena Lenina politekhnicheskoy institut.
(Structural frames--Welding)

KARES, J., inz.; TROCIL, J., inz.

Specialization of gear wheel production. Stroj vyr 9 no.7:366-367 '61.

1. Statni planovaci komise, Praha.

TROCIUK, J.

"Investment Tasks of Power and Their Realization." p.225
(PRZEGLAD ELEKTROTECHNICZNY Vol. 29, no. 6, June 1953 Warszawa, Poland)

SO: Monthly List of East European Accessions, LC, Vol. 3, no. 5, May 1954/Uncl.

TRODLER, Ya.M.

Adapting Kirshner's drill for drilling in costal operations.
Khirurgiia 33 no.3:128 Mr '57. (MLRA 10:6)

1. Iz bol'nitsy goroda Gomelya.
(RIBS, surg.
modification of Kirshner's drill (Bus))

TRODLER, Ya.M., podpolkovnik meditsinskoy sluzhby

Attachment for the KP-14 oxygen apparatus for giving oxygen to
sick. Voen.-Med.zhur. no.10:82-83 O '55. (MLRA 9:10)
(OXYGEN--THERAPEUTIC USE)
(PHYSIOLOGICAL APPARATUS)

TRODLER, YA. M.

"Adaptation of the Oxygen Apparatus KP-11, For
Oxygen Administration to the Patients"

pp. 82 Voenno-Med. Zhur. No.10 October, 1955

TRODLER, Ya. M.

"Adaptation of KP-14 Oxygen Apparatus for Oxygen Administration to the Patients,"
Voyenno-med. zhur., No.10, pp 82-83, 1955

TRET'YAKOVA, K. A., TRODZENSKIY, D. E.

"The Rate of Synthesis of Cholesterol and Fatty Acids in the Suprarenal Glands, Testicles and Liver of Young and Old Rats Normally and After Irradiation."

Theses of the Proceedings of the Annual Scientific Sessions 23-26 March 1959
(All-Union Institute of Experimental Endocrinology)

From the Radiation Laboratory (Head--Docent D. E. Grodzenskiy of the All-Union
Institute of Experimental Endocrinology (Director--Professor Ye. A. Vasyukova)

1ST AND 2ND ORDERS										100 AND 4TH ORDERS									
PROCESSING AND PROPERTIES INDEX																			
<p>Oxidation of organic matter in the pretreatment of soils for mechanical analysis. E. M. CROWTHER AND K. E. THORPE. <i>Proc. 2nd Intern. Congr. Soil Sci., London 1937, 1, 48-51</i> (1932) (in English). Various treatments preliminary to mech. analysis and the necessity for oxidation with many soils are discussed. If the ratio of total to inorg. colloids, as indicated by ignition loss: H_2O in air-dry soil, exceeds 2.5, oxidation is probably necessary. A method of cold oxidation by $NaBrO_3$ is described and its advantages over hot H_2O_2 treatment pointed out. Ten g. soil is treated overnight in a 400-ml. beaker with 200 ml. $N NaOH$ and 5 ml. H_2O. Residue is destroyed by addn. of a little NH_4OH and the soil washed on a filter with N and 0.1 $N NaCl$, and finally H_2O, until the filtrate becomes slightly turbid. C. J. SCHOLLMEIER</p>																			
ASM. S. L. A. METALLURGICAL LITERATURE CLASSIFICATION																			
1ST AND 2ND ORDERS										100 AND 4TH ORDERS									

TROELSEN-JOHANSEN, GUDRUN
H. R. HANSEN, Tidsskr. Planteavl, 55, 31, p 109, 1951

GTRSPL, no. 45

Ellern, S.S., Troepol'ski, V.I. and Bal'chunas, A.E., Givetian deposits of Tartary, 125-7

Akademiya Nauk, S.S.S.R., Doklady, vol. 79, no. 1

TROEV, D.
"My work as a swine breeder" (p. 19) KOOPERATIVNO ZEMODELIE
(Ministerstvo na zemedelieto) Sofiya Vol 8 No 12 1952
SO: East European Accessions List Vol 2 No 7 Aug 1954

KALASHNIKOV, S.N., kand.tekhn.nauk; TROFLEYEV, N.N.

Advanced technology for machining gear-wheel teeth of the
distributing shaft of the ZIL-130 engine. Avt.prom. 31
no.10:33-36 0 '65.

(MIRA 18:10)

1. Moskovskiy avtozavod imeni Likhacheva.

SOKOLOV, V.N.; TROFLEYEV, N.N.

Cold rolling of the Hindley worm gear of a steering wheel. Avt.trakt.
prom. no.6:20-23 Je '53. (MLRA 6:6)

1. Moskovskiy avtozavod im. Stalina. (Automobiles--Steering gear)

BRASHNIKOVA, M.G.; KUDINOVA, M.K.; TROFILEYEVA, R.N.

A study of the decomposition products of monomycin. Biokhimiia
26 no.3:448-453 My-Je '61. (MIRA 14:6)

1. Institute of New Antibiotics, Academy of Medical Sciences of
the U.S.S.R., Moscow
(ANTIBIOTICS)

ARTEM'YEV, A.A.; GENKINA, Ye.V.; MALIMONOVA, A.B.; TROFIL'KINA, V.P.;
ISAYENKOVA, M.A.

Reduction of nitrocyclohexane with sodium thiosulfate.
Zhur.VKHO 10 no.5:588-589 '65.

(MIRA 18:11)

1. Gosudarstvennyy institut azotnoy promyshlennosti i
produktov organicheskogo sinteza.

TROFIMA, S.

"On Scientists in Fields of Microbiology, Chemico-Minerology, Optics and Spectroscopia, Moscow, Tomsk, Norosibirsk, Kola Peninsula, Murmansk, RSFSR

P: Robotnitsa Feb. 47 Moscow

Soviet Source: Abstracted in USAF "Treasure Island" Report No. 19470, on file in Library of Congress, Air Information Division.

TROFIMCHUK D.
ZABAZNOV, P., polkovnik; TROFIMCHUK, D., polkovnik.

A rifle company attacks a prepared enemy defense line at night.
Voen. vest. 37 no.1:25-31 Ja '58. (MIRA 11:2)
(Attack and defense (Military science))
(Infantry drill and tactics)
(Night fighting)

ZABAZNOV, P., polkovnik; TROFIMCHUK, D., polkovnik.

Night attack of a company. Tankist no.3:29-34 Mr '58. (MIRA 11:5)
(Tank warfare) (Night fighting (Military science))
(Attack and defense (Military science))

TROFIMCHUK, D.A., polkovnik; LOPATA, G.G., polkovnik; KREKSHIN, N.A.,
red.; BUKOVSKAYA, N.A., tekhn.red.

[Combat operations of a platoon at night] Boevye deistviia
vzvoda noch'iu. Moskva, Voen.izd-vo M-va obor.SSSR, 1961.
75 p. (MIRA 14:12)
(Night fighting (Military science))

12

5

Improving the Service Conditions of Rolling-Mill Rolls. V.A. Trushchuk. (Stal, 1938, No. 7, pp. 41-47). (In Russian). The author presents some instructions relating to the operation of blooming, section, sheet, and wire mills. These demonstrate the best methods of storing and transporting the rolls. He points out some causes of fractures and surface defects in rolls and their prevention.

ASB-51.1 METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

2125 Trofimchuk, V.D.

Defekty Prokatnoy Stali I Mery Bor'by s Nimi. M., Metallurgizdat, 1954.
632 s.s. Ill. 23sm. 6.000 EKZ. 22r. 55k. V Per.-Bibliogr: S. 618-25
(240 Nazv.)--
(54-56506)p

621.771.00464(016.3)

TROFIMCHUK, Vyacheslav Dmitriyevich; STAKHOVSKIY, A.I., redaktor;
GOLYATKINA, A.G., redaktor; ATTOPOVICH, M.K., tekhnicheskiiy redaktor.

[Defects in rolled steel and measures of overcoming them] Defekty
prokatnoi stali i mery bor'by s nimi. Moskva, Gos. nauchno-tekhn. izd-
vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 631 p. (MLRA 8:1)
(Steel) (Rolling(Metalwork))

TROFIMCHUK, V. D.

N/5
733.9
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Defekty Prokatnoy Stali i Mery Bor'by s Nimi (Defects of Rolled Steel and the Extent of Efforts to Improve It) Moskva, Metallurgizdat, 1954.

631 P. Illus., Diagr., Tables.

Bibliography: P. 618-625.

12

S

The "Overlapped" Method of Rolling. V. D. Trofimchuk.
(Stal, 1937, No. 9, pp. 46-49). (In Russian). In the "overlapped" method of rolling steel sections in three-high rolling mills with rolls having a number of progressively decreasing passes, two sections, at different stages of the rolling process, are allowed to pass through the rolls simultaneously. In view of the greater stresses on the rolls as compared with those set up when only one section is rolled at a time, some effect on the dimensional accuracy of the rolled products may be expected. In the article the author summarizes some data regarding this effect, obtained by measurements on rails rolled in a 500-mm. diameter section rolling mill by the "overlapped" method, and in conclusion examines some possibilities of reducing dimensional variations when using this method of rolling.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

USSR / Zooparasitology. Parasitic Worms. Helminths of Man.

Abs Jour: Ref Zhur-Biol., No 6, 1959, 24244.

Author : Trofimov, A. I.

Inst : Not given.

Title : On the Problem of Helminthofauna of the Population of Zaonezhskiy Rayon of Karelian ASSR.

Orig Pub: Sb. nauchn. rabot vrachey KarASSR, 1958, vyp. 1, 35-37.

Abstract: In 1956, 2,870 humans were examined in the region and 757 (26.3%) helminth carriers were discovered. Broad tapeworm was found in 695 cases (24.2%) and ascarides in 54 (1.8%). In separate villages which were not subjected to sanitization, 60% of the population was affected with diphyllbothriasis. The infectivity of the population by diphyllbothriasis increases with age.

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TROFIMENKO, A. P. & BABAK, S. F.

"On the Influence of Acetone on the Size of the Change in the Polarization Level of Tartaric Acid & on the Rate of Chemical Reaction Between It & Ethyl Alcohol"; Zhur. Fiz. Khim.; 13, No. 3, 1939; Uzbek State Univ., Samarkand; Recd 25 July 1939.

Report U-1613, 3 Jan. 1952.

1ST AND 2ND CROSSLINES

PROCESSES AND PROPERTIES INDEX

CA

The ultraviolet absorption spectrum of various mixtures of acetic acid with ethyl alcohol. A. P. Trofimenko. *Trudy Uzbekskogo Gosudarst. Univ., Sbornik Rabot Khim.* 15, 64-6 (1980).--The limit of absorption of light by AcOH in the quartz ultraviolet region is displaced on diln. with water. Addn. of EtOH to AcOH causes first a displacement of the absorption of light by AcOH in the displacement of short waves. This is attributed to the fact that the no. of the light-absorbing mol. of EtOH. they are replaced by the "transparent" mol. of EtOH. Absorption of light begins to increase when the ratio AcOH:EtOH approaches 1:1 and the absorption limit returns to the initial position. A further addn. of EtOH displaces the absorption limit in the direction of the shorter waves. The spectrum of the reactivity of the mol. its state, which is related to the reactivity of the mol. Thus, the results of the expts. indicate the change of reactivity of AcOH mol., depending on the amt. of EtOH added. Ten references. W. R. Henn

AD-511 A METALLURGICAL LITERATURE CLASSIFICATION

AD-511 A METALLURGICAL LITERATURE CLASSIFICATION

TROFIMENKO, A.P.; FEDORUS, G.A. [Fedorus, H.A.]

Thermoelectric current in CdS single crystals [with summary in English].
Ukr.fiz.zhur. 3 no.4:468-474 J1-Ag '58. (MIRA 11:12)

1. Institut fiziki AN USSR.
(Cadmium sulfide) (Thermoelectricity)

TROFIMENKO, A.P.; FEDORUS, G.A. [Fedorus, H.A.]

Effect of annealing and of some impurities on the dark resistance
and photosensitivity of CdS monocrystals. Ukr. fiz. zhur. 3 no.6:
839-841 N-D '58. (MIRA 12:6)

1. Institut fiziki AN USSR.

(Cadmium sulfide--Optical properties)
(Cadmium sulfide--Electric properties)

SCV/78-3-10-3/35

AUTHORS:

Mizetskaya, I. B., Trofimenko, A. P., Fursenko, V. D.

TITLE:

A Method of Production of Monocrystals of CdS, CdSe, and Mixed Monocrystals of CdS+CdSe (Metodika polucheniya monokristallov CdS, CdSe i smeshannykh monokristallov CdS+CdSe)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 10, pp 2236-2239 (USSR)

ABSTRACT:

The method was described by which monocrystals of CdS and CdSe and mixed monocrystals of CdS+CdSe are produced. Metallic cadmium, sulfur and selenium were used as initial materials. The principle of the method is that vaporous cadmium, selenium and sulfur in argon atmosphere, which acts as a supporting gas, is introduced into the field of reaction at a temperature of 1000°C, where sulfides and selenides of cadmium are formed. It was found that optimal conditions are given for CdS-synthesis when the field of reaction has a temperature of 1060-1070°C. The temperature for monocrystals of cadmium sulfide in the zone of evaporation is 650°C, and 300-350°C for the evaporation of sulfur. Optimal conditions are given for the production of CdS+CdSe when a temperature of 1050-1070°C has been reached. A scheme of the apparatus

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SOV/76-3-10-3/35

A Method of Production of Monocrystals of CdS, CdSe, and Mixed Monocrystals of CdS+CdSe

is given in figure 1 which is used in the production of monocrystals of CdS and CdSe, as well as of monocrystals of CdS+CdSe. It was found that the grain size of monocrystals depends on the flow velocity of argon during the crystallization process. The best results were obtained when argon had a velocity of 80 cm³ per minute. With regard to the optimal conditions, the monocrystals of CdS and CdSe, as well as those of CdS+CdSe, are photo-sensitive. The monocrystals of CdS are lemon-colored, and those of CdSe black. The mixed monocrystals of CdS+CdSe vary in color from pink to red. That variation in color depends on the ratio CdS : CdSe. The mixed crystal becomes more and more dark when the quantity of CdSe is increased more and more. The grain size varies between 10-20 mm. There are 4 figures and 2 references, 0 of which is Soviet.

ASSOCIATION: Institut fiziki Akademii nauk USSR (Physics Institute of the Academy of Sciences, UkrSSR)

SUBMITTED: July 22, 1957

Card 2/2

30119

S/194/61/000/007/035/079
D201/D305

24.2600 (1043, 1114, 1482)

AUTHORS: Trofimenko, A.P. and Fedorus, G.A.

TITLE: The effect of annealing and of certain impurities
on the dark resistance and photo-sensitivity of CdS
monocrystals

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 7, 1961, 24, abstract 7 G157 (V sb. Vopr. metal-
lurgii i fiz. poluprovodnikov, M., AN SSSR, 1959,
112-116)

TEXT: The spread of individual characteristics of CdS monocryst-
als results in difficulties of their study. Experiments are descri-
bed which have been carried out to explain and remove the origin of
these difficulties. It has been proved that the main reason the
spread of characteristics is the presence of impurities. Analysis
and elimination of this effect requires supplementary experiments;
annealing makes it possible to reduce the spread of characteristics

Card 1/2

The effect of annealing...

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D201/D305

which is due to the formation of a heteromorphic surface layer and (or) to a different rate of cooling of the sample after crystallization; the sample composition differs from stoichiometry; but the effect of annealing in this case could not be explained. Data pertaining to the specimens activated and thermally processes in various conditions are given. 5 references. [Abstracter's note: Complete translation] ✓

Card 2/2

S/181/60/002/01/24/035
B008/B014

24.7600

AUTHORS: Boyko, I. I., Rashba, E. I., Trofimenko, A. P.TITLE: Thermally Stimulated Conductivity of Semiconductors

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 1, pp. 109-117

TEXT: The theory of thermally stimulated conductivity was established on the basis of a sufficiently general semiconductor model (Fig. 1). It is shown that the depth of the local level can be determined by studying the curves of thermally stimulated conductivity at different rates of heating. A preliminary comparison was made between theory and experiment. CdS samples with an admixture of Au were investigated. The gold was introduced at 550-650°C. Measurements were made by means of an apparatus described in Ref. 5. The rate of heating could be changed within the range 0.5 ÷ 1.5 deg/sec. Three peaks of thermally stimulated conductivity were found in the samples under consideration. At a heating rate of $v = 0.5$ deg/sec, the peaks are found at 110, 240, and 290°K approximately. The relative values of the high-temperature maxima changed considerably from sample to sample (Fig. 2). The 240°K peak of that sample which did

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Thermally Stimulated Conductivity of Semiconductors

S/181/60/002/01/24/035
B008/B014

not show the highest high-temperature maximum was studied in detail. From this the authors concluded that the temperature dependence of β and τ is negligible. Fig. 3 illustrates the determination of the adhesion level from measuring points. ϵ is determined by the slope of the straight. They yield almost the same values of the activation energy $\epsilon = 0.34$ ev. Fig. 4 shows curves representing the electron concentration $n(T)$ for three values of v . As may be seen, there is satisfactory agreement between theory and experiment. The greatest divergencies occurred at the end of the $n(T)$ curves within the low-temperature range. The dependence on $n(T) \sim \exp\left(-\frac{\epsilon}{kT}\right)$ found in experiments was considerably smaller than that predicted by theory. This is probably due to the fact that the sample had a smaller number of centers the activation energy of which was somewhat below 0.34 ev. It was theoretically found (equation (27)) that the recombination near the $n(T)$ maximum was mainly monomolecular. The authors thank Engineer A. I. Sheretun for having prepared the samples. There are 4 figures and 5 references, 2 of which are Soviet.

Card 2/8
2

Physics Inst. AS Ukr SSR, Kiev
Submitted: Apr. '59

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81630

S/181/60/002/06/18/050
B122/B063

24,7600

AUTHORS: Trofimenko, A. P., Fedorus, G. A., Razmadze, A. K.

TITLE: Some Peculiarities of the Thermal Stimulation of the Conductivity of CdS Single Crystals

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1141 - 1147

TEXT: The article under review deals with the following problems of the above-mentioned subject: recombination and filling up of electron traps at the maximum of thermally stimulated conductivity (TSC), the part played by the surface in this connection, and the possible relationship between the photoconductivity of CdS single crystals and the area of the TSC curve. TSC was measured by means of an apparatus described in the paper of Ref. 7. The specimens were exposed to white light, the wavelengths $\lambda > 0.8 \mu$ being excluded. Beside samples with a pure stoichiometrical ratio of the components, the authors studied such with an excess of one component. The measurements obtained were in full agreement with those already described in Ref. 7. At a Cd excess, peaks were observed in the range of -195 to -180°C , and at

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Some Peculiarities of the Thermal Stimulation of the Conductivity of CdS Single Crystals S/181/60/002/06/18/050
B122/B063

only a slight Cd excess, also a peak in the range of 15 - 25°C, at an S excess a number of peaks, the highest peak at 0 - 6°C. From the results obtained here and from further investigations on the temperature dependence of the adhesion cross section of the excess component $\sigma(T)$ the attempt was made to determine the depth of the levels caused by the excess. Experiments were made at higher temperatures on CdS(Au) and CdS(S) crystals which were kept at low temperatures and were then hardened. In these crystals, the plane bounded by the TSC curve is completely independent of temperature. Such a dependence was, however, established on the CdS(S) single crystal (Fig. 1). A maximum filling of the traps with electrons at the various illumination conditions takes place at -65 to -50°C. $\sigma(T)$ drops exponentially with all crystals, which fact is ascribed to the necessity of surmounting a potential threshold in these crystals. At high temperatures as well it is possible to observe a decrease in the filling of the local levels, but no explanation could be provided for this. Experiments made on the determination of the filling degree at temperatures of the TSC maximum (\bar{T}) (Fig. 3) showed the recombination taking place to be predominantly monomolecular. Experiments made on the dependence of the TSC on the wavelength of light

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5

X

81630

Some Peculiarities of the Thermal Stimulation of the Conductivity of CdS Single Crystals S/181/60/002/06/18/050
B122/B063

revealed a decrease in the maxima with strong light absorption. This was best observed on CdS(S). A special treatment of the surface (short etching with HCl) did not appreciably change the TSC peaks nor photosensitivity, and new maxima did not arise. This shows that the impurities on the crystals did not form any surface film, but that they penetrate into the crystals. The influence of mica discharge manifested itself by a considerable enlargement of the areas of the TSC curves, a strong increase in light sensitivity and by the appearance of a strongly retarded quasi-dark conductance (Fig. 4, the peak becomes very much larger). The determination of the level depth is rendered more difficult in this connection. The study of a dependence between TSC curve areas and photosensitivity revealed (data in a table) that samples undergoing the same treatment exhibit the same relation between the quantities mentioned. A rigorous correlation between the two quantities can be set up only under consideration of the lifetime of electrons in the conduction band. Still, it was possible to establish a certain dependence of the photosensitivity on the concentration of the local levels in the outer part of the forbidden zone. The authors finally thank Professor V. Ye. Lashkarev, Academician of the AS UkrSSR for having supervised the work. There are 4 figures, 1 table, and 14 references.

Card 3/4 *Inst Physics, AS UkrSSR Kiev*

86804

S/185/60/005/001/002/018
A151/A029

7.4/60 (3201, 1003, 1105)
26 1512

AUTHORS: Trofimenko, A.P.; Fedorus, H.A.

TITLE: ~~Investigation of the Times of Decrease of the Photocurrent in CdS~~
Single Crystals at Various Temperatures and Lighting Conditions

PERIODICAL: Ukrayins'kyy Fizychnyy Zhurnal, 1960, Vol. 5, No. 1, pp. 12 - 25

TEXT: An investigation of the times of decrease of photoconductivity after switching the light off was carried out on a number of CdS single crystals within a wide temperature range and at various lighting conditions of the samples. During all the measuring operations the lighting of the samples was effected by rectangular light pulses, an incandescence lamp serving as the light source. All rays with a wave length of more than 8μ which could have caused an extinction of the photoconductivity were eliminated. The maximum lighting was estimated according to the value of the short circuit current of a germanium photodiode and equalled approximately 10^{10} quant/sec. Gray neutral filters helping to decrease the lighting on the samples by 10^6 times served for the weakening of light. The times of the photocurrent drop after the sample was darkened, were measured under three different conditions: the quasistationary, single pulse and repeated pulse condition. In the course of the investigation it was ascertained that various

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86804

S/185/60/005/001/002/018
A151/029

Investigation of the Times of Decrease of the Photocurrent in CdS Single Crystals
at Various Temperatures and Lighting Conditions

types of annealing and the impurities introduced into the CdS single crystals have an essential effect on the time value of the photocurrent drop. The following conclusions were drawn: a) depending on measuring conditions, the time of the photocurrent drop can change within a very wide range, from values lower than 10^{-4} sec to 1 sec and higher; b) for the majority of the crystals investigated, the line of the photocurrent drop is a sufficiently smooth curve with an almost rectilinear starting section of 10-percent; at lower temperatures, a characteristic break of the curve was observed on all those samples which have a large number of traps; within the room temperature range, the starting section of the line of drop is usually curved; c) as a rule, an increase in the time of photocurrent drop takes place in the case of a decreased lighting; the lower the temperature of the sample, the more intense will be the increase in the time of the drop; at rather high temperatures, a decrease of τ [ABSTRACTOR'S NOTE: τ stands for photoconductivity] takes place with the decrease of lighting on certain samples; d) it is shown that the times of the photocurrent drop measured under quasistationary conditions with a high illumination of the samples with white light (10^{18} quanta/cm² sec) correspond essentially to the lifetimes of the photoelectrons in a free state;

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86804

S/185/60/005/001/002/018

A151/A029

Investigation of the Times of Decrease of the Photocurrent in CdS Single Crystals at Various Temperatures and Lighting Conditions

In the case of a weak illumination ($10^{13} - 10^{14} \frac{\text{quants}}{\text{cm}^2 \text{ sec}}$) the temperature dependence in the times of the photocurrent drop is chiefly determined by the concentration and the energy distribution of local levels within the forbidden zone; e) the investigation of the photoconductivity drop under pulse conditions makes it possible to eliminate to a certain extent the distorting effect of the traps on the times of the photocurrent drop which is observed in the CdS single crystals; f) the experiments conducted lead to a conclusion showing in which cases the traps do not essentially affect the time of the photocurrent drop. In closing, both authors express their appreciation to V.Ye. Lashkar'yov, Professor and Academician of the AS of UkrSSR, for his attention and valuable advice given in accomplishing this work. There are 8 figures and 7 references: 1 Soviet, 3 English and 3 German.

ASSOCIATION: Instytut fizyki AN URSR (Institute of Physics, AS Ukr SSR)

SUBMITTED: June 17, 1959

Card 3/3

TROFIMENKO, A.P.; SHEYNKMAN, M.K.

Effect of an electric field on the thermally stimulated
conductivity of CdS single crystals. Fiz.tver.tela 4 no.7:
1963-1965 J1 '62. (MIRA 16:6)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.
(Cadmium sulfide crystals) (Photoconductivity)
(Electric fields)

Classification: A-30-1010

Authors: Prof. A. A. Fedorov, A. A. Fedorov, M. K. Mayskaya

Title: Dependence of thermoelectric conductivity on illumination conditions for single crystals of CdS treated in sulfur fumes

SOURCE: Fizika tverdogo tela, v. 5, no. 7, 1963, 1805-1813

TOPIC TAGS: thermoelectric conductivity, illumination, Cd, S, fumes, coulomb carrier, activation energy, sulfur, cadmium

Abstract: In their investigation the authors varied the temperature, duration, and intensity of illumination. Samples cooled to test temperature during interrupted illumination, or cooled to test temperature in dark and then illuminated. In the region of -100 to -150 , the maximum of thermoelectric conductivity observed at -10 or $+100$ with a duration of 20 sec depends exponentially on the test temperature of the sample. They have activation energies ranging from 0.7 to 1 eV, depending on the sample. The dependence of the thermoelectric current on the duration of illumination proved to be exponential, varying as $\exp(-t/\tau)$ to $\exp(-t/\tau_0)$. The authors discovered that the position of thermoelectric-current peaks depends on the conditions of illumination only.

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ACCESSION NR: AP3003873

one peak appears at +65C during continuous illumination; illumination at temperatures below -50C gives two peaks (at -10 and +10C), and the peak at +65C is either absent or very small. These peculiarities in the thermoelectric conductivity may be explained on the basis of a complex structure center having several nearby trapping levels surrounded by a single repulsive coulomb barrier. "The authors express their deep thanks to Academician V. Ye. Lashkarev of the Academy of Sciences, Ukrainian SSR for his interest in the work and his very valuable discussions, and they thank I. V. Markevich for aid in making the measurements." Orig. art. has: 6 figures and 2 formulas.

ASSOCIATION: Institut poluprovodnikov AN UkrSSR Kiev (Institute of Semiconductors, Academy of Sciences, Ukrainian SSR)

SUBMITTED: 28Jan63

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OTHER: 006

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TROFIMENKO, A. T.

Research into the Motion of a Stream Along the Surface of a Body. p. 182

TRANSACTIONS OF THE 2ND REPUBLICAN CONFERENCE ON MATHEMATICS AND MECHANICS
(TRUDY VTOROY RESPUBLIKANSKOY KONFERENTSIY PO MATEMATIKE I MEKhanIKE), 184
pages, published by the Publishing House of the AS KAZAKH SSR, ALMA-ATA, USSR, 1962

TROFIMENKO, A. I.

PLACE 1 BOOK EXHIBITION: SOV/5950

Sovetskaya po priblizhnoy osnovoy dinamiki. Alma-Ata, 1956

Trudy Sovetskoy po priblizhnoy osnovoy dinamiki, 5. Alma-Ata, 23-26 oktyabrya 1956 g. (Transactions of the Conference on Applied Gas Dynamics, Held in Alma-Ata, 23-26 October 1956). Alma-Ata, Izd-vo Ak. Kazakhskoy SSR, 1959. 233 p. Errata slip inserted. 900 copies printed.

Sponsoring Agency: Akademiya nauk Kazakhskoy SSR. Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova.

Editorial Board: Resp. Ed.: I.A. Vullis; V.P. Kashkarov; T.P. Leont'yeva and B.P. Ustimenko. Ed.: V.V. Aleksandrovskiy. Tech. Ed.: Z.P. Borokina.

PURPOSE: This book is intended for personnel of scientific research institutes and industrial engineers in the field of applied fluid mechanics, and may be of interest to students of advanced courses in the field.

Transactions of the Conference (Cont.)

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CONTENTS: The book consists of the transcriptions of 31 papers read at the conference on gas dynamics which was convened under the initiative of the Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova (Kazakh State University imeni S.M. Kirov) and the Institut energetiki Akademii nauk Kazakhskoy SSR (Institute of Power Engineering of the Academy of Sciences Kazakhskaya SSR) and held October 23-26, 1956. Three branches of applied gas dynamics were discussed, namely: jet flow of liquids and gases, aerodynamics of turbine processes, and the outflow of liquids. The practical significance of the transcriptions of the conference consists in the adaptation of theory to methods of technical computation and measuring methods related to industrial furnaces and other industrial processes in which aerodynamic phenomena play a predominant role. Eight papers read at the conference are not included in this collection for various reasons. The authors of the missing papers are: L.D. Lvov (Thermal and Aerodynamic Characteristics of Pulverized Coal Flame Burners) and A.A. Golevskiy (Outlines and Physical Models of the Jet Motion Mechanisms of Fluids), M.I. Abatov, Ye. P. Bagdarov, S.F. Buzman, T.K. Mironenko, A.B. Reriyakov, and G.V. Yakobov. L.G. Loyt'yanskaya is mentioned as being in charge of a department of the Kazakh State University, and I.D. Malyukov, candidate of Physical and Mathematical Sciences, Docent, as a member of the same university. References are found at the end of

Session of October 24, 1956 (Morning)

Antonov, G.S. Investigating Turbulence Characteristics of a Free Isothermic Jet and an Open Flow

Kashkarov, V.P. [Candidate of Physical and Mathematical Sciences]. On Parallel and Contrary Motion of Two Uniform Flows of Compressible Gas

Transactions of the Conference (Cont.)

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Leont'yeva, T.P. [Candidate of Technical Sciences]. Expansion of Axially Symmetrical Jets in Parallel and Contrary Flows

Buzman, S.F. Regularity of Motion and Combustion of Coal Particles

Razarmat, M.M., and E.I. Pol'skiy. On the Crisis in the Viscous Flow of Gas in a Plane Parallel Channel

Contents of the Discussion in Brief

Session of October 24, 1956 (Evening)

Trofimova, N.N. Expansion of an Axially Symmetrical Jet of Gas in a Medium of Different Density

Chokshov, T.V. [Vsesoyuznyy elektromekhanicheskiy institut (All-Union Electrotechnical Institute)]. Electrodynamics of Electrothermic Gas Flows and Investigation Isothermic Gas Flows

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TROFIMENKO, A.T.

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PA - 1825

SUBJECT USSR / PHYSICS
 AUTHOR VULIS, L.A., TROFIMENKO, A.T.
 TITLE Heat Problems connected with a Laminar Beam Propagated along a Wall.
 PERIODICAL Zhurn.techn.fis, 26, fasc.12, 2709-2713 (1956)
 Issued: 1 / 1957

The solution of the heat problem for a flat laminar beam of an incompressible liquid propagated along a wall is found by the integration of differential equations with corresponding boundary conditions. The two first equations correspond to the dynamic problem solved by AKANTOV. The problem is investigated for three types of boundary conditions: $\frac{\partial T}{\partial y} = 0$ (The boundary conditions

1. For $y=0$, $T=0$; for $y = \infty$, $T=0$,
 for temperature and velocity are similar).
 2. For $y=0$, $\frac{\partial T}{\partial y} = 0$, for $y = \infty$ $T=0$, $\frac{\partial T}{\partial y} = 0$ (The beam is propagated along the wall of the non-heat-conductive material).
 3. For $y=0$ $T=T_w$, for $y = \infty$ $T = 0$, $\frac{\partial T}{\partial y} = 0$ (Motion along a wall with constant temperature). In all these cases T is the excess temperature.
- These cases are now dealt with separately. The here obtained results and equations and final formulae (for all three cases) are obtained also in the first approximation of the heat problem with respect to the laminar beam emitted

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from a radial gap diffuser along a wall. The corresponding dynamic problem has been solved by CUKKER. The relative temperature- and velocity profiles obtained are shown in form of diagrams. The solution of the dynamic as well as of the heat problem can be approximatively added to a turbulent motion on the condition that the coefficients of the turbulence-exchange are assumed to be constant. The relative velocity profiles according to AKANTOV and the experimental results obtained by FOERTMANN differ noticeably. Here the difference in the structure of "turbulent kinematic viscosity" in a flow near a solid wall as well as in one that is located at a certain distance from the wall becomes apparent. The case of a turbulent beam requires special investigation.

INSTITUTION: Kazachian State University, Alma-Ata.

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Translation from: Referativnyy zhurnal, Elektrotehnika, 1959, No. 13, p. 20,
26300

AUTHOR: Potseluyko, V. A., Trofimenko, A. T.

TITLE: On the Investigation of a Temperature Field by the Method of
Electrothermal Analogy

PERIODICAL: V. sb.: Issled. fiz. osnov rabocheho protsessa topok i pechey,
Alma-Ata, AN KazSSR, 1957, pp. 242-251

TEXT: The Laplace equation does not only describe a steady heat conduction process, but also the distribution of the electric potential in conductors, which makes it possible to study the heat conduction process on an electric model, in which the electric field simulates the temperature field of the specimen. It is also possible to use the analogy between the elementary laws of heat and electrical conduction. In the present investigation, the method of electrical thermal analogy is used to solve two problems: 1. The heat emission of a rib of trapezoidal shape under third-order boundary conditions. The

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On the Investigation of a Temperature Field by the Method of Electrothermal Analogy

analytical solution of this problem is connected with great difficulties. The model consists of 2 different liquid electrolytes, divided by a glass partition wall with a number of "bridges" conducting the current from one electrolyte to the other. The partition wall simulates the surface limiting the temperature field, while the external - in respect to the partition wall - electrolyte is the thermal resistance. The measurements were conducted with a "conventional bridge circuit. The results obtained show that an inadequate accuracy is inherent to the analytical methods. 2. The investigation of the temperature field of a cylinder of finite length with the purpose of uncovering the effect of losses at the butts in a device for the determination of the thermal coefficient. A description of the model and the methods used for processing the results is given. The effect of the butts on the temperature field in the mean section depends on the ratio of the length of the cylinder to its diameter. This effect disappears at the ratio value of ≥ 5 ; it becomes noticeable at -3 . The possibility was obtained to select an efficient position for placing the soldering points of thermocouples in a laboratory device, and the possibility

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A002/A001

On the Investigation of a Temperature Field by the Method of Electrothermal
Analogy

to estimate distortions of the temperature field. It is pointed out that there
is a possibility to develop a new type of thermal protection for cylindrical
devices of finite length.

A. A. D.

Translator's note: This is the full translation of the original Russian
abstract.

X

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SCV/124-59-10-12055

Translation from: Referativnyy zhurnal, Mekhanika, 1959, No. 10, p. 136 (USSR)

AUTHOR: Trofimenko, A. T.

TITLE: Investigation of a Turbulent Semi-Restricted Stream

PERIODICAL: Uch. zap. Kazakhsk. un-ta, 1957, Vol. 30, pp. 63-69

TEXT: The distribution of averaged velocities in turbulent semi-restricted streams was measured with Pitot-tubes and a thermoanemometer. As an example, the velocity distribution in the two-dimensional case is given. The result of calculating the boundary layer is added, when using the following relationship experimentally proved:

$$\int_0^{\infty} u^2 \left(\int_0^y u \, ds \right) dy = \text{const}$$

and the Prandtl theorem on the turbulence viscosity. A comparison of the calculation with the author's measurements and other data is given. The peculiarities of turbulence agitation in the boundary layer are discussed for the flow of a semi-restricted stream along a wall; the author suggests a solution based on the combination of two solutions in the maximum velocity point: for the free stream and the boundary layer. Results from measuring the averaged dynamic characteristics along the stream are reported. There are 6 references.

B. A. Fidman

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TRUP IMENKO, H. T.

5(1) FRASE I BOOK EXPLANATION 807/1659

Rademysa munk Kazakhskiy SSSR, Alma-Ata.

Izdatel'stvo fizicheskikh i matematicheskikh nauk Kazakhskiy SSSR, Alma-Ata. (Investigation of the Physical Basis of Operational Processes of Combustion Chambers and Furnaces) Alma-Ata, Izdat AN Kazakhskiy SSSR, 1957. 359 p. 600 copies printed.

Additional Sponsoring Agency: Alma-Ata, Kazakhskiy gosudarstvennyy universitet im. S.M. Kirova.

M. (Title page): L.A. Pells, Doctor of Technical Sciences, Professor; M. (Inside book): S.M. Gilyarskiy, Tech. Ed.; I.P. Korotkina.

PURPOSE: This book is intended for a wide circle of scientists and industrial engineers.

COVERAGE: The twenty-nine articles of this collection report on experimental and theoretical investigations of different physical phenomena which constitute an integral part of the complex operational processes of modern combustion engineering equipment, and also, the entire process applicable to different types of burners and furnaces (cyclone combustion chambers, muffle burners, burners with auto-oxidation stokers, etc.). Articles in Part I treat liquid and turbulent jets of liquid and compressible gas. Part II reviews methods of modeling combustion processes (light, hydrodynamic and electrical), enthalpy, temperature measurement, calorimetry, etc. Part III relates to different problems and theories of fuel combustion and special operational problems of combustion and furnace equipment. No personalities are mentioned.

Kashin, V.P. The Question of the Flat Boundary of a Compressible Gas Jet 166

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Petsalov, V.A., and A.T. Froimukh. The Investigation of a Temperature Field by an Isotherm Analogy Method 242

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